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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
KIM, PAUL D

ART UNIT	PAPER NUMBER
3729	

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/864,918	Applicant(s) CARPENTER, CHARLES	
	Examiner Paul D Kim	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,6-13,15,19 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6-13, 15, 19 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4 and 5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claims 1, 2, 6-13 and 15 are objected to because of the following informalities:

Re. Claim 1: Change the phrase "a SAW die" in line 10 to –the SAW device--.

Change the phrase "a lid" in line 13 to –the lid--.

Re. Claim 6: Change the phrase "a lid" in line 3 to –the lid--.

Re. Claim 19: Change the phrase "a lid" in line 10 to –the lid--.

Change the phrase "an inserted SAW die" in line 10 to –the inserted SAW die--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 2, 6-13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re. Claim 1: The phrase "the interior" in line 8 lacks antecedent basis.

The limitation "a plurality of the cavities" in lines 10-11 renders vague and indefinite. It is unclear whether these cavities are the same cavities recited in line 4 or not.

Re. Claim 6: The phrase "the periphery" in line 4 lacks antecedent basis.

The phrase "the package array-lids combination" in line 5 lacks antecedent basis.

Re. Claim 19: The limitation "a plurality of the cavities" in lines 4-5 renders vague and indefinite. It is unclear whether these cavities are the same cavities recited in line 4 or not.

The limitation "the array may be separated" in line 12 renders vague and indefinite. It is unclear whether the array is separated into individual Saw devices or a whole one-piece SAW device.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 6-10, 12, 13, 15, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimoto et al. (US PAT. 5,611,129) in view of Maslakow (US PAT. 5,471,011).

Yoshimoto et al. teach a method of making a packaged piezoelectric oscillator comprising steps of: forming a unitary array of a material having opposing first and second surfaces and a plurality of cavities (12 as shown in Fig. 9) extending into the array from the first surface, each cavity dimensioned to receive a SAW die (13) therein as shown in Fig. 6 and 7; providing at least two conductor paths (17c,18c) from an

interior of each cavity to a surface of the array as shown in Fig. 8; inserting and attaching the SAW die face down into each of a plurality of the cavities, each SAW die having conductive means (13b,13c) electrically contacting the conductive paths within the interior of the corresponding cavity after insertion as shown in Fig. 8 and Fig. 19; sealing a lid (16) over each inserted SAW die; and separating the array into individual SAW devices along separation lines between adjacent cavities as shown in Fig. 20 and Fig. 21 (col. 5, line 2 to col. 9, line 4).

As per claims 6-10 Yoshimoto et al. teach that providing a sealing material such as solder paste or thermoplastic resin in the cavity and heating the sealing material to cure to seal the lid (col. 8, lines 49-54).

As per claim 13 Yoshimoto et al. teach that the array (11) id made of non-conductive material such as epoxy resin (col. 5,lines 4-9).

As per claim 15 Yoshimoto et al. also teach that the welding processes are used for sealing the lid to the cavity from an ambient environment (col. 6, lines 39-45). Inherently, the welding process is hermetically sealed the lid to the cavity.

However, Yoshimoto et al. do not teach a process of forming a recess at each cavity to receive the lid. Fig. 1 of Maslakow shows a cavity (315) having a recess (319) to receive a lid (322) within the recess for sealing the lid (col. 6,lines 34-57). Therefore, it would also have been obvious at the time the invention was made to a person having ordinary skill in the art to modify each cavities of Yoshimoto et al. by forming a recess at

each cavities as taught by Maslakow for the purpose of sealing the lid to horizontal plans with the substrate.

As per claim 20 a dimension of the recess of Maslakow is greater than a dimension of the corresponding cavity in order to form an area of overlap (319), wherein the lid is sealed in the recess engaged the area of the overlap as shown in Fig. 1.

Yoshimoto et al. also do not teach the array made of a ceramic. However, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to provide the ceramic as recited in the claimed invention because Applicant has not disclosed that the non-conductive material as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Yoshimoto et al. because the non-conductive material as recited in the claimed invention would perform equally well such as the non-conductive material such as epoxy resin in Yoshimoto et al. Therefore, it would have been an obvious matter of design choice to modify the non-conductive material of Yoshimoto et al. to obtain the invention as specified in claim 12.

6. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimoto et al. in view of Maslakow, further in view of Yoshihara et al. (US PAT. 5,824,177).

Yoshimoto et al., modified by Maslakow, teach all of the limitations as set forth above except a process of forming a tape means over the lid and substrate. Yoshihara

et al. teach a method for making a semiconductor device including a process of forming an adhesive layer (6) to cover a lid (1) prior to a cutting process to prevent movement of the structure during the cutting process as shown in Fig. 3E (col. 4, lines 57-64). Therefore, it would also have been obvious at the time the invention was made to a person having ordinary skill in the art to modify facilitating a process of making a packaged piezoelectric oscillator of Yoshimoto et al., modified by Maslakow, by forming an adhesive layer to cover a lid as taught by Yoshihara et al. for the purpose of preventing the movement of the composite structure during the cutting process.

As per claim 11 Yoshihara et al. also teach a process of placing the adhesive layer on the first surface, separating from the second surface while maintaining continuity of the adhesive layer across the first surface and removing the individual components (1) after the cutting process from the adhesive layer (6) as shown in Fig. 3E-4E.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chung (US PAT. 6,428,650) and Gotoh et al. (US PAT. 6,282,781) are cited to further show the state of the art with respect to method of manufacturing an optical device.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D Kim whose telephone number is 703-308-8356. The examiner can normally be reached on Tuesday-Friday between 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5648.

pdk
June 23, 2003

PETER VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700